

## **Analyzing the efficiency of AI on the skills of Iranian learners in French as a foreign language.**

**Mahtab Mohammadi<sup>1</sup> Tahereh Mohammadpour<sup>2</sup>**

**Bachelor of English translation from Azad university**

**PhD, French language teaching from Tarbiat Modares university**

### **Abstract:**

Artificial intelligence or AI, is a program that seeks to imitate human intelligence through computational algorithms. The effects of artificial intelligence are tangible in the world and language is the main pillar of communication between us humans and these machines. This article examines the impact of artificial intelligence on language teaching and learning. We evaluate the advantages and disadvantages of this application through questionnaires intended for Iranian learners of French as a foreign language. This paper attempts to focus on the appropriate use of the computational power we have currently available in mobile apps which are used in language education. The possibilities of artificial intelligence are already massively used various kind of marketing (Amazon, Google, etc...) in the way we have never experienced before. The computer algorithms know us better than we know ourselves and it is widely exploited in personalized offer of these and other business to customer services.

The results of the study clearly show that, in general, IA proves to be effective for language learners, especially regarding aspects of conjugation and the acquisition of new vocabularies. This effectiveness is observable in many users who regularly use technology to improve their language skills.

**Key words:** Artificial intelligence, Iranian learners, Skill, French.

## Introduction:

The research focused on 10 mobile apps which are used for learning a foreign language based both on the Android platform and iOS. They were chosen according to the number of downloads, i.e. ten most downloaded apps were tested. Some of them have more than 100 million downloads and we can assume that they will probably have several millions of users. The exact numbers of users are not available; therefore, the number of downloads was the primary indicator to test these apps.

All these apps have the user evaluation score higher than 4 out of 5, which indicates that the users are very satisfied with these apps. All these apps were downloaded as of February 2020 and evaluated from the user point of view whether they implement any kind of artificial intelligence. The Table 1 summarizes the information about the apps which were tested. All the apps are named using letters of the alphabet for the reasons of confidentiality. There is no need to use disclose the name of the app as this research does not aim at improving a particular app but only describes the current situation in the use of AI in mobile apps which are used in language education.

NAME OF THE APPLICATION	REVIEW ( IN 5)	NUMBER OF DOWNLOADS ( IN MILLIONS)
A	4.7	100+
B	4.6	10+
C	4.7	10+
D	4.7	1+
E	4.7	1+

F	4.7	5+
G	4.1	1+
H	4.7	0.1+
I	4.5	0.1+
J	4.6	0.05+

Table 1. The list of tested apps

The world around us is vastly influenced by AI and it is ubiquitous in basically all intelligent aspects of human life. Therefore, it can be claimed that (**H1**) in mobile apps which are used for learning foreign languages AI aspect must be present in the majority of them at least in its basic form. Hypothesis 2 (**H2**) claims that the use of AI in mobile apps will increase their attractiveness for the users. The research was conducted on a limited sample of apps, however, these are the most downloaded apps, therefore, it can be claimed that the results which are yielded by this research are relevant and can be generalized in the area of mobile apps for language learning.

It is highly probable that these vastly used apps will have more resources (both funds and people) to implement AI rather than smaller developers. However, further research is needed in due course to test if there is any development in time as AI has been implemented recently in basically all areas of human activity.

### Methodology:

The testing was conducted in February 2023 from the user point of view, however, from a position of an educated opinion, i.e. with solid information regarding the nature of AI in mobile apps. The idea behind the test was to identify possible usage of AI in the language apps, i.e. if those apps are

only repositories of various texts and listening activities or if they use some more sophisticated tools which are clustered under a term of AI or deep learning, machine learning, etc.

The researcher focused on the presence of various kinds of AI that could be used in these mobile language apps such as processes which will not be based on predefined algorithms but will use some machine learning strategies.

For example, in vocabulary acquisition the student will be tested not based on predefined tests and procedures, but rather on their progress in the language acquisition process. In the same way, grammar could be tested likewise, i.e. there are no predefined tests, but the user of the app is tested based on their past performance. Another aspect of AI in these apps could be that the students would be able to read articles which are based on their personal preferences

based on e.g. Google research, etc. Of course, there are many privacy issues regarding e.g. GDPR, but they could be resolved by an agreement of the user to use this data which could help the app to personalize the contents for the user.

## Results:

The findings of the research after testing these apps are rather surprising and as follows::

- 1- The vast majority of the apps do not use any AI
- 2- Basically, all of them only used predefined algorithms without any deep learning or machine learning
- 3- The AI Is present in traces in speech recognition, however, only in two tested apps and still not used the full potential of AI.

**Table2. The list of tested apps and the use of AI**

NAME OF THE APPLICATION	THE USE OF AI
A	Some traces of AI when testing the user's pronunciation
B	No AI detected
C	No AI detected
D	No AI detected
E	No AI detected
F	No AI detected
G	No AI detected
H	No AI detected
I	It seems that AI is used in speech recognition
J	No AI detected

In summary, the apps lack basically any presence of AI, deep learning or machine learning. Mostly, they behave on their predefined algorithms. This function is naturally necessary, but it should be used only as a starting point, later after an initial test the user should have an opportunity to obtain a personalized content. In none on the tested apps this has not been confirmed. The vocabulary is just based on lists of words and very simple testing paradigms. In some cases, AI is detected in a

The second part of the research focused on the testing of H2 that claims that the majority of users would welcome AI implementation in the language apps and this implementation would increase their attractiveness and usefulness. 93% of the respondents clearly stated that AI implementation would be a positive improvement. Only 7% of the respondents claimed that there might be security issues when AI is implemented, and therefore, would not implement AI into these language learning apps. This finding is also crucial and should be considered as very important for designers of language learning apps. Despite the fact that AI is present almost everywhere in many aspects of human life these days, the hypothesis H1 that it will be present in mobile apps which are used in foreign language education has not been proved. This finding is rather surprising and can be a stimulus for further activity regarding the implementation of AI in mobile platforms used for

language education.

H2 has been confirmed as more than 90% of the respondents claimed that any kind of AI implementation into language learning apps would improve their attractivity and usefulness.

## **Conclusion:**

The findings of the research are rather surprising; therefore, it is necessary to reconsider the possibilities of AI and attempt to improve language education enhanced by mobile apps by implementing AI into them. The question is why there is basically no AI present in language apps when AI has been massively implemented in smart environments (smart homes, smart cities, eGovernment, etc.). The most important recommendation regarding the use of AI is to implement it in a minimalistic way so that it will not be a costly solution, however, this simple implementation can significantly increase the efficiency of the app regarding its learning impact. The most important aspect of AI implemented in language apps would be testing the user based on their progressive development, i.e. for example grammar exercises which would be modified and repeated until the user can successfully apply the given rules. The same can be done in vocabulary acquisition, i.e. the user will be tested the new word in various contexts until they are aware of the use and context of the given word. This is a substantial benefit of AI in mobile apps, probably the most important one because no human teacher is able to process so much information about individual students and the words or grammar each of them needs.

The future development of the utilization of AI in mobile apps for learning a foreign language will probably be very abrupt as can be seen in other areas of human endeavor, and it is very strange that our researched area still lacks behind. The reason would also be lower profitability opportunities which are connected to these apps. Implementing AI into them would be quite demanding regarding time and money, however, eventually, the benefits are substantial, both for the user and the company offering the solution with AI.

It is also very probable that any mobile app which wants to be attractive and therefore successful will have to implement, to a certain extent, AI, deep learning or machine learning, otherwise it will

not succeed. The users will probably look for this parameter in the app description and it will be a benchmark upon which other apps will be evaluated.

The paper attempted to highlight the importance of implementation of artificial intelligence, deep learning and machine learning into the language learning apps. After the analysis of the current situation regarding the utilization of these current approaches, the research clearly shows that the application of any kind of artificial intelligence is nearly missing. The reason for this is unknown and is appalling when we consider how much attention is given to the topic in the area of marketing and data mining in other areas of human endeavor, such as business and ICT.

However, it is important to highlight the importance of this implementation and utilization, otherwise our education cannot be competitive enough and the language education will lose its sustainability in the global world.

This paper is an attempt to prove that this issue needs our attention and IT companies should use this as an opportunity for enhanced profitability. Higher education institutions should be ready to help with the development of AI enabled devices and apps so that they can be used in their educational processes.

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